Contents of Aquaculture, Volume 121

VOL. 121 NOS. 1-3 15 MARCH 1994 Prologue and Acknowledgments...... ix Response to Photoperiod Manipulation Neuroanatomical analysis of the visual and hypophysiotrophic systems in Atlantic salmon (Salmo salar) with emphasis on possible mediators of photoperiodic cues during parr-Effects of photoperiod and temperature on growth and parr-smolt transformation in Atlantic salmon (Salmo salar L.) and subsequent performance in seawater V.A. Solbakken (Bergen, Norway), T. Hansen (Matredal, Norway) and S.O. Stefansson The use of photoperiod in the production of out-of-season Atlantic salmon (Salmo salar) smolts Genetics - Stock-Specific Performance Observations on the pituitary gland of three stocks of Atlantic salmon during the development of bimodality in length frequency Aspects of parr-smolt transformation in anadromous and resident forms of brown trout (Salmo trutta) in comparison with Atlantic salmon (Salmo salar) Effect of smolt age, sex and environmental conditions on sea age at first maturity of anadromous brown trout, Salmo trutta, in Norway Hybridization with domesticated rainbow trout reduces seasonal variation in seawater adaptability of steelhead trout (Oncorhynchus mykiss) **Interactions Between Sexual Maturation and Smolting** Smolt development and subsequent sexual maturity in previously mature male Atlantic salmon (Salmo salar) Effect of growth on early sexual maturation in stream-type chinook salmon (Oncorhynchus

An alternative view of smolting in salmonids	
J.E. Thorpe (Pitlochry, UK)	105
Growth, Metabolism and Hydro-Mineral Balance	
Effect of salinity on survival and growth of Atlantic salmon (Salmo salar) parr and smolts	
J. Duston (Blacks Harbour, N.B., Canada)	115
Muscle ornithine decarboxylase activity as an indication of recent growth in pre-smolt	
Atlantic salmon, Salmo salar	
T.J. Benfey (Fredericton, N.B., Canada), R.L. Saunders, D.E. Knox and P.R. Harmon	
(St. Andrews, N.B., Canada)	125
Effects of a dietary betaine/amino acid additive on growth and seawater adaptation in	
yearling chinook salmon	
W.C. Clarke (Nanaimo, B.C., Canada), E. Virtanen (Helsinki, Finland), J. Blackburn	
(Nanaimo, B.C., Canada) and D.A. Higgs (West Vancouver, B.C., Canada)	137
Changes in lipid metabolism and plasma concentrations of thyroxine, cortisol, and	
somatostatin in land-locked chinook salmon, Oncorhynchus tshawytscha, during smoltification	
D.J. Cowley, M.A. Sheridan (Fargo, ND, USA), T.L. Hoffnagle, A.J. Fivizzani,	
B.A. Barton (Grand Forks, ND, USA) and C.D. Eilertson (Fargo, ND, USA)	147
Ultrastructure of pancreatic B-cells of Atlantic salmon (Salmo salar) during smoltification	
and seawater adaptation	
M.L. Carranza, J.L. Allen and T.M. Bradley (Kingston, RI, USA)	157
Changes in intestinal water absorption in coho salmon during short-term seawater	
adaptation: a developmental study	
T.H. Kerstetter (Arcata, CA, USA) and R.J. White (Cheney, WA, USA)	171
Endocrinology	
Methodology for implanting cortisol in Atlantic salmon and effects of chronically elevated	
cortisol on osmoregulatory physiology	
J.L. Specker, D.M. Portesi, S.C. Cornell and P.A. Veillette (Kingston, RI, USA)	181
Stimulation of parr-smolt transformation by hormonal treatment in Atlantic salmon (Salmo	
salar L.)	
G. Boeuf, A.M. Marc (Plouzané, France), P. Prunet, P.Y. Le Bail (Rennes, France) and	
J. Smal (Seraing, Belgium)	195
Growth hormone response to seawater challenge in Atlantic salmon, Salmo salar, during	
parr-smolt transformation	
M. Schmitz, I. Berglund, H. Lundqvist (Umeå, Sweden) and	
B.Th. Björnsson (Göteborg, Sweden)	209
Migration — Factors Affecting Survival	
Some factors which influence the survival of hatchery Atlantic salmon (Salmo salar) smolts	
utilized for enhancement purposes	
G.J. Farmer (Halifax, N.S., Canada)	223
Physiological and hormonal differences among Atlantic salmon parr and smolts reared in the	
wild, and hatchery smolts	
S.D. McCormick (Turners Falls, MA, USA) and B.Th. Björnsson (Göteborg, Sweden)	235
The effect of time, size and sex on recapture rates and yield after river releases of Salmo salar smolts	
H. Lundqvist (Umeå, Sweden), S. McKinnell (Nanaimo, B.C., Canada), H. Fängstam	
and I. Berglund (Umeå, Sweden)	245
Homing of Atlantic salmon (Salmo salar L.) to a tributary spawning stream in a major river catchment	
A.F. Youngson (Aberdeen, UK), W.C. Jordan (Belfast, UK) and D.W. Hay (Pitlochry,	
Perthshire, UK)	259

Downstream migration of immature salmon (Salmo salar) smolts blocked by implantation of the androgen 11-ketoandrostenedione	
I. Berglund, H. Lundqvist and H. Fängstam (Umeå, Sweden)	260
Physiological changes related to migration tendency in rainbow trout (<i>Oncorhynchus mykiss</i>)	. 209
R.D. Ewing (Corvallis, OR, USA), D. Barratt and D. Garlock (Scio, OR, USA)	277
Abstracts	
Multiple changes in the brain of Atlantic salmon, Salmo salar, during photoperiodically-induced parr-smolt transformation	
PP. Morin, J.G. Eales, T.J. Hara (Winnipeg, Man., Canada), S. Winberg and	
G.E. Nilsson (Uppsala, Sweden)	289
Possible mode of seawater-adapting actions of growth hormone in salmonids	. 207
T. Sakamoto, T. Hirano (Tokyo, Japan), S.D. McCormick (Turners Falls, MA, USA),	
S.S. Madsen, R.S. Nishioka and H.A. Bern (Berkeley, CA, USA)	291
Hepatic and branchial thyroid hormone 5'-monodeiodinase activities during the parr-smolt	
transformation of juvenile coho salmon (Oncorhynchus kisutch)	
R.M. Sweeting, G.P. Alexander and B.A. McKeown (Burnaby, B.C., Canada)	293
Effect of reduced daylength on growth, sexual maturation and smoltification in Atlantic	
salmon (Salmo salar) underyearlings	
A. Berg (Matredal, Norway), S. Stefansson (Bergen, Norway) and	
T. Hansen (Matredal, Norway)	294
Photoperiod, melatonin and the timing of smoltification in salmonid fish	
C.F. Randall, N.R. Bromage (Stirling, UK), J.E. Thorpe and M.S. Miles (Pitlochry, UK)	295
Photoperiod affects timing of parr-smolt transformation, subsequent growth and incidence of sexual maturation of Atlantic salmon (Salmo salar)	
L. Jónsson, S.S. Árnason (Reykjavik, Iceland), B.Th. Björnsson (Göteborg, Sweden),	
J. Jónasson and V. Jóhannsson (Reykjavík, Iceland)	296
Dietary protein requirements of Atlantic salmon during smoltification	
A.J. Wiggs (Fredericton, N.B., Canada), E.B. Henderson (St. Andrews, N.B., Canada)	
and D.H. Wiggs (Fredericton, N.B., Canada)	298
Influence of triploid status on salmon smoltification	
G. Boeuf, H. Seddiki, A. Le Roux, A. Severe (Plouzane, France) and PY. Le Bail	• • • •
(Rennes, France)	300
VOL. 121 NO. 4 1 APRIL 1	994
Genetics and Breeding	
Analysis of a diallel cross to estimate effects of crossing on performance of red swamp crawfish, <i>Procambarus clarkii</i>	
B.G. Bosworth, W.R. Wolters and A.M. Saxton (Baton Rouge, LA, USA)	301
A genetic evaluation of the influence of stocking density on the early growth of rainbow trout (Oncorhynchus mykiss)	
M.J. Bagley, B. Bentley and G.A.E. Gall (Davis, CA, USA)	313
Husbandry and Management	
Fouling development and its effect on the growth of juvenile giant scallops (Placopecten	
magellanicus) in suspended culture	
M.R. Claereboudt, D. Bureau, J. Côté and J.H. Himmelman (St. Foy, Qué., Canada)	327

Nutrition	
Effect of dietary vitamin E and selenium on growth, survival and the prevalence of Renibacterium salmoninarum infection in chinook salmon (Oncorhynchus tshawytscha)	
R. Thorarinsson, M.L. Landolt, D.G. Elliott, R.J. Pascho and R.W. Hardy (Seattle, WA, USA)	343
Effects of dietary selenite or selenomethionine on tissue selenium levels of Atlantic salmon (Salmo salar)	
M. Lorentzen, A. Maage and K. Julshamn (Bergen, Norway)	. 359
Physiology and Endocrinology	
Scale effects of MS-222 on a marine teleost, porgy Pagrus major	
S. Oikawa, T. Takeda and Y. Itazawa (Fukuoka, Japan)	. 369
Short Communication	
Induced spawning and early life description of the mangrove red snapper, Lutjanus argentimaculatus	
A.C. Emata, B. Eullaran and T.U. Bagarinao (Iloilo, Philippines)	. 381
Author Index	. 389
Contents of Aquaculture Volume 121	303